Technology Integration Center

Technology Integration Center Overview

Presented By
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Director, Technology Integration Center

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Technology Integration Center

The ISEC Mission

The Information Systems Engineering Command (ISEC), serves as the Army's engineer and integrator for infrastructure / force projection information systems that support MACOM, Army, CINC, and Sustaining Base information requirements. The Command ensures vertical and horizontal systems integration of sustaining base and strategic systems with seamless interoperability into the theater / tactical environment.

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ISEC Business Areas

Strategic Information Systems
Design, integrate & engineer Army Info Systems between Post, Camp or Station Delivery Points
Design, integrate & engineer corporate level information management solutions using COTS/NDI
ISEC
Design Process and Technology Integration
Design, integrate & engineer Army Info Systems inside Post, Camp or Station Delivery Points
Evaluate COTS/NDI for insertion into Government Information Systems
Information Transport Infrastructure
Technology Integration for Information Systems

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The Technology Integration Center

The Technology Integration Center

- **State-of-the-Art Engineering and Evaluation Facility**
  - **Communications and Computer Products**
  - **Security Products**
  - **Engineering in support of Army PMs and Industry**
- **History**
  - **Formed in 1984 by LTG (Ret) Emmet Paige**
  - **We've grown from 4 employees to approximately 125 DA Civilians, Military, and Contractors**

Technology Integration Center

VISION ***"Be the Army's Critical Enabling Agent for Infusing Information Technologies Into Total IT Solutions; Verify & Validate vendor claims ."***

CORE COMPETENCIES:

- **Information Technology Chan**
- **Unparalleled Comprehensive Security Product Evaluation and Total System Certification.**
- **End to End Systems Emulation, Modeling, & Simulation**
- **Honest Broker in IT Evaluations**

The Technology Integration Center

- **Strengths**
  - **Experts on evaluation and integration of COTS Products**
  - **Honest Broker – evaluate and say it like it is**
  - **Value Added for Vendors (we find hardware and code problems on products); product development**
  - **TIC Reports are read throughout DoD**
  - **Respected throughout DoD; TIC evaluations enhance vendors' opportunities within DoD**

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COTS

Mission

Operate an information technology engineering facility supporting:

- **Technical Assessments of State of the Art Information Technologies**
- **Information Technology Insertion Planning**
- **Systems Testing Focused on Integration, Performance and Interoperability**

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Objectives

- Enable New Technologies in Customer Programs
- Maximize System Performance Using Modeling and Simulation
- Validate ISEC System Designs
- Identify Emerging Technologies and Grow Expertise Therein
- Improve COTS Products

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TIC Initiatives

- Make Modeling and Simulation Part of Every TIC Evaluation
- Work Closely with Academia and Industry for Technological Innovation
- Make TIC Facilities and Services available to Commercial Customers as well as DoD
- Put contracts and agreements in place with Industry and Academia to solve problems facing the Government and Industry
- Use Modeling, Simulation, and Emulation to prove out and validate Security Designs and Products (like we do for communications designs and products)

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Critical Skills Expertise

- **Modeling, Simulation & Emulation**
- **Emerging Technologies**
- **Transport Engineering**
- **Multimedia Applications**

Just a few of ISEC's 20 Critical Skill Experts

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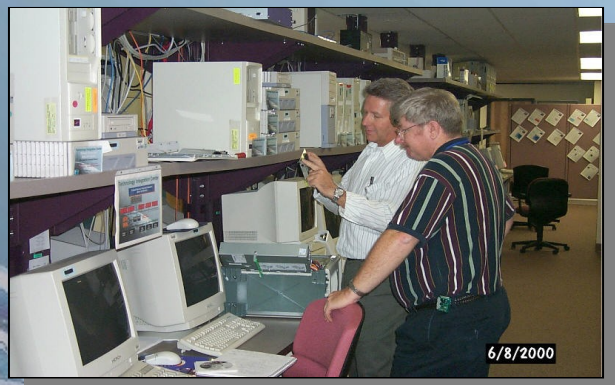
V & V VENDOR CLAIMS

Performance Engineering Lab



Computer Evaluation Lab

Modeling & Simulation Lab

Communication Engineering L

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Computer Evaluation La

- Technical Specs for Army IDIQ Contract
- Technical Assessment of Candidate Prod
- Stand-Alone Bench Marking of PC's and
- Product Eval of Security Products
  - Firewalls
  - Intrusion Detection Systems
  - Security Routers
- System Security Certification & Accredit
- Biometric Testing

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Modeling & Simulation Lab

"Hardware in the Loop"
The incorporation of COTS networking hardware into OPNET models and simulations

Goals:

- Synchronize efforts of IT community to support the Warfighter
- Provide *quantitative* solutions to real world problems
- Ensure *interoperability* of products and systems in a Joint Service or mixed vendor environment
- Evaluate products and aid vendors (product development, troubleshooting, large scale

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Networking & Communications Lab

- Component Bench Marking - “Bit Blasting”
- Interoperability Testing
- NSM Verification & Validation
  - SNMP & MIB Testing
  - Element Manager Compatibility
- Enterprise Testing and System Evaluation
  - “Security in Depth”
- Captures Networks as architecturally planned and tests network capabilities and limitations

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Performance Testing Lab

Remote Terminal Emulator (RTE)

“Virtual Users”

- **Hyper Text Transfer Protocol (HTTP)**
- **File Transfer Protocol (FTP)**
- **World Wide Web (gif images)**
- **FTP (puts and get)**
- **Telnet/Rlogin (ASCII text)**
- **E-mail (varying sizes)**
- **MPEG Video**

Differing Loads and Traffic Mix

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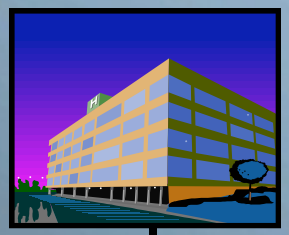


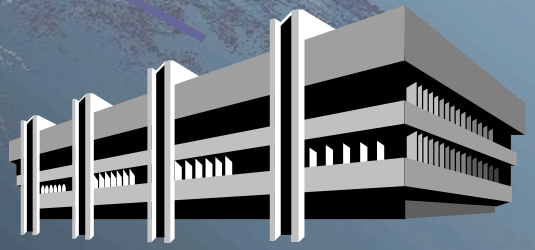
EPG

JITC

Battle Labs

DREN

CECOM RDEC DIL



TIC

TIC Focus: Sustaining Base

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Sustaining Base

GATE 2

DISN DATA HIGHWAY

WETZEL

O'CONNELL

ELLIS

CHILES

MCGRATH

BARKELEY

SPECKER

KHE SANH

FIBER OPTIC CABLE "DATA PIPELINE"

BDE HQ
- C4I
- E-MAIL
- ASSET VIS
- VTC

BN HQ
- SIDPERS
- C4I
- E-MAIL

POST HQ
- GCCS / DMS
- VTC / COLL PLAN
- SPLIT BASE OPS

DISCOM/ DOL/ DRM
- ELEC COMMERCE
- PAPERLESS CONTRACTING
- TOTL ASSET VIS

MAINTENANCE
- GCSS-A
- ULLS
- TOTL ASSET VIS

MOTOR POOL
- GCSS-A / ULLS
- TOTL ASSET VIS
- FIXED TACTICAL INTERNET

DOD SCHOOLS
- DIST LEARN
- WWW

HOSPITAL
- TELE-MED

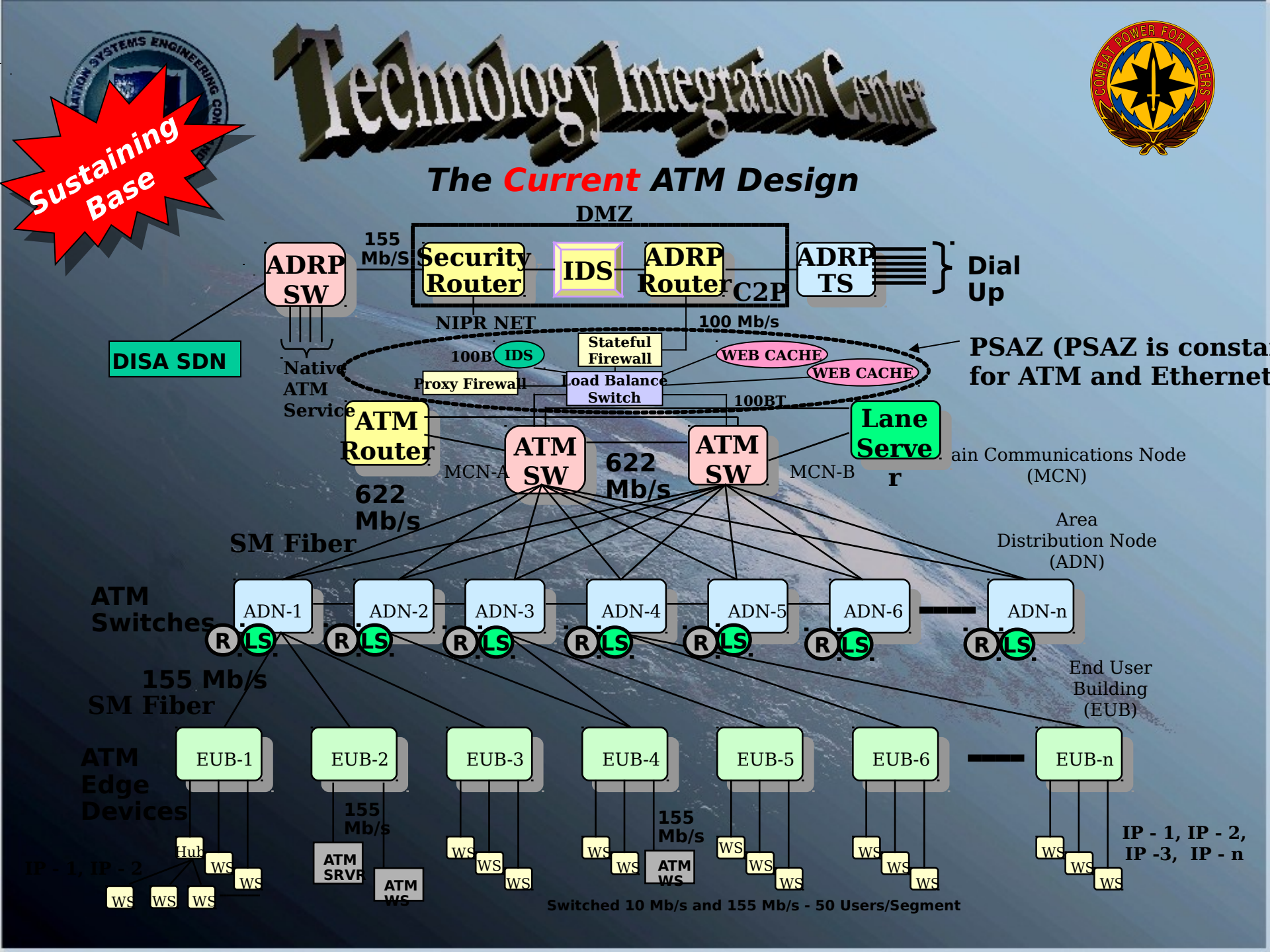
CLASSROOM XXI
- DIST LEARN
- TELE CONF
- SIMULATION

RANGE

Components

1. HIGH CAPACITY FIBER OPTIC CABLE CONNECTED TO DISN
2. FIBER PIPELINE & SWITCHES TO HIGH PRIORITY BUILDINGS
3. FIBER PIPELINE TO OTHER BLDGS

I3A REPLACES OLD COPPER WIRE WITH FIBER


Sustaining Base
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The Current ATM Design
DMZ
155 Mb/S
ADRP SW
Security Router
IDS
ADRP Router
C2P
ADRP TS
Dial Up
NIPR NET
100 Mb/s
DISA SDN
Native ATM Service
100B
IDS
Stateful Firewall
WEB CACHE
WEB CACHE
Proxy Firewall
Load Balance Switch
100BT
PSAZ (PSAZ is consta
for ATM and Ethernet
ATM Router
ATM SW
622 Mb/s
MCN-A
ATM SW
MCN-B
Lane Serve r
ain Communications Node (MCN)
622 Mb/s
SM Fiber
Area Distribution Node (ADN)
ATM Switches
ADN-1
ADN-2
ADN-3
ADN-4
ADN-5
ADN-6
ADN-n
R
LS
155 Mb/s
SM Fiber
End User Building (EUB)
ATM Edge Devices
EUB-1
EUB-2
EUB-3
EUB-4
EUB-5
EUB-6
EUB-n
155 Mb/s
155 Mb/s
IP - 1, IP - 2
Hub
WS
ATM SRVR
ATM WS
ATM WS
IP - 1, IP - 2, IP -3, IP - n
Switched 10 Mb/s and 155 Mb/s - 50 Users/Segment

Sustaining Base

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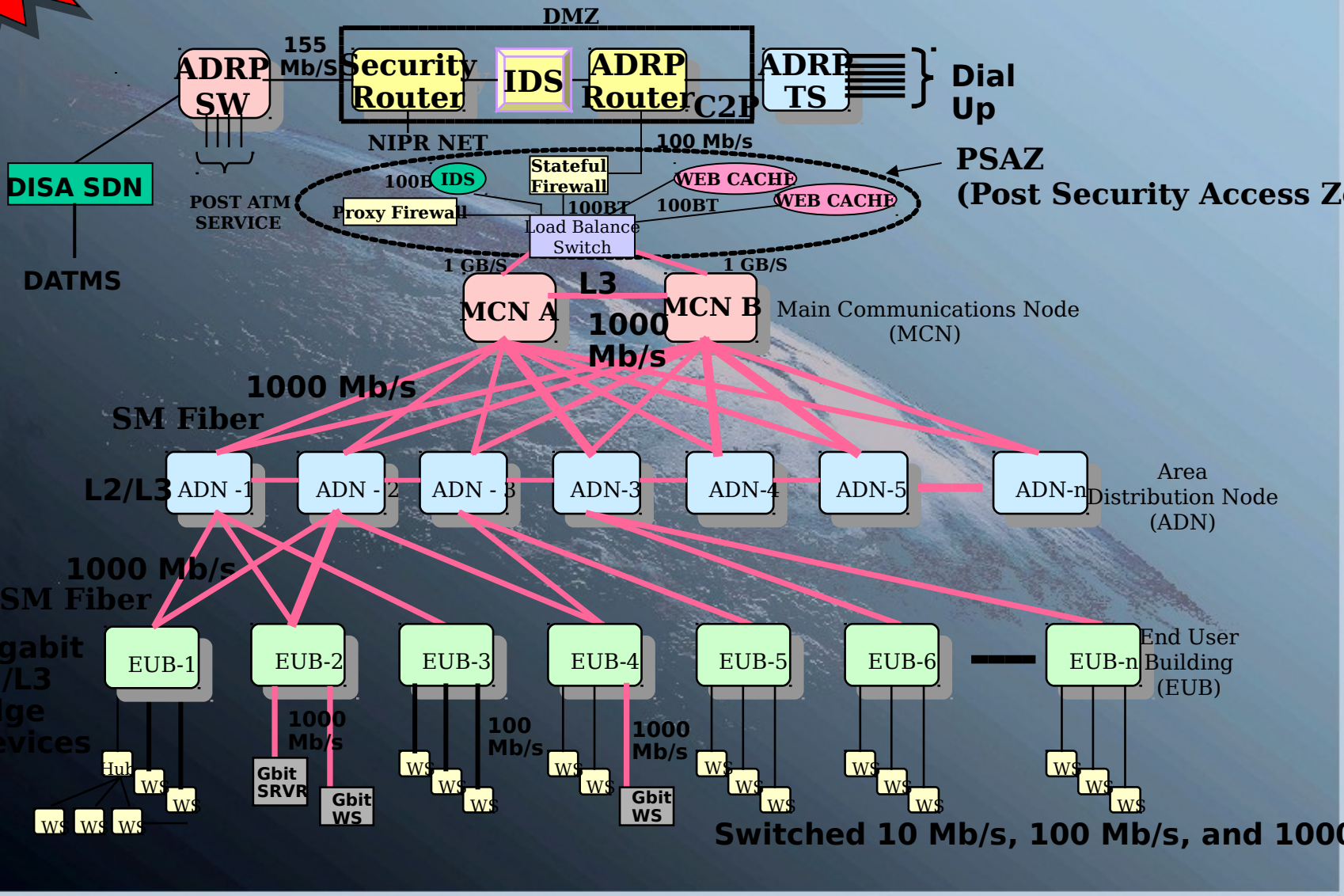
The Current IP Design



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ISEC's Approach to

"Defense in Depth"

Level 1 Security - Perimeter (WAN Interface)

High Level Packet Filtering [illegible] Vulnerabilities

- -Ping
- -Source Routing
- -Internal Source Address
- -Bad Boy List

Army Policy Enforcement

Level 2 Security - Backbone (Installation Infrastructure)

Installation Level Policy Enforcement and Session State Awareness

- -Deny Un-established Connections
- -Drop packets not associated with session

Installation Policy

Level 3 Security - Enclave (Organization/Office)

Organization Level Policy Enfor[illegible]

- -Specific to Organization
- -Definable and Enforceable
- -May include service Proxies
- -Email Server Anti-Virus/Malicious Code Detectio

Installation/ Enclave Policy

Level 4 Security - System /Host (OS & Application)

Information System Specific Policy Enforcement

- -Operating Systems Hardening
- -Network Connection Acceptance
- -User ID and Authentication
- -Application Security

System Vulnerability Assessment and Correction

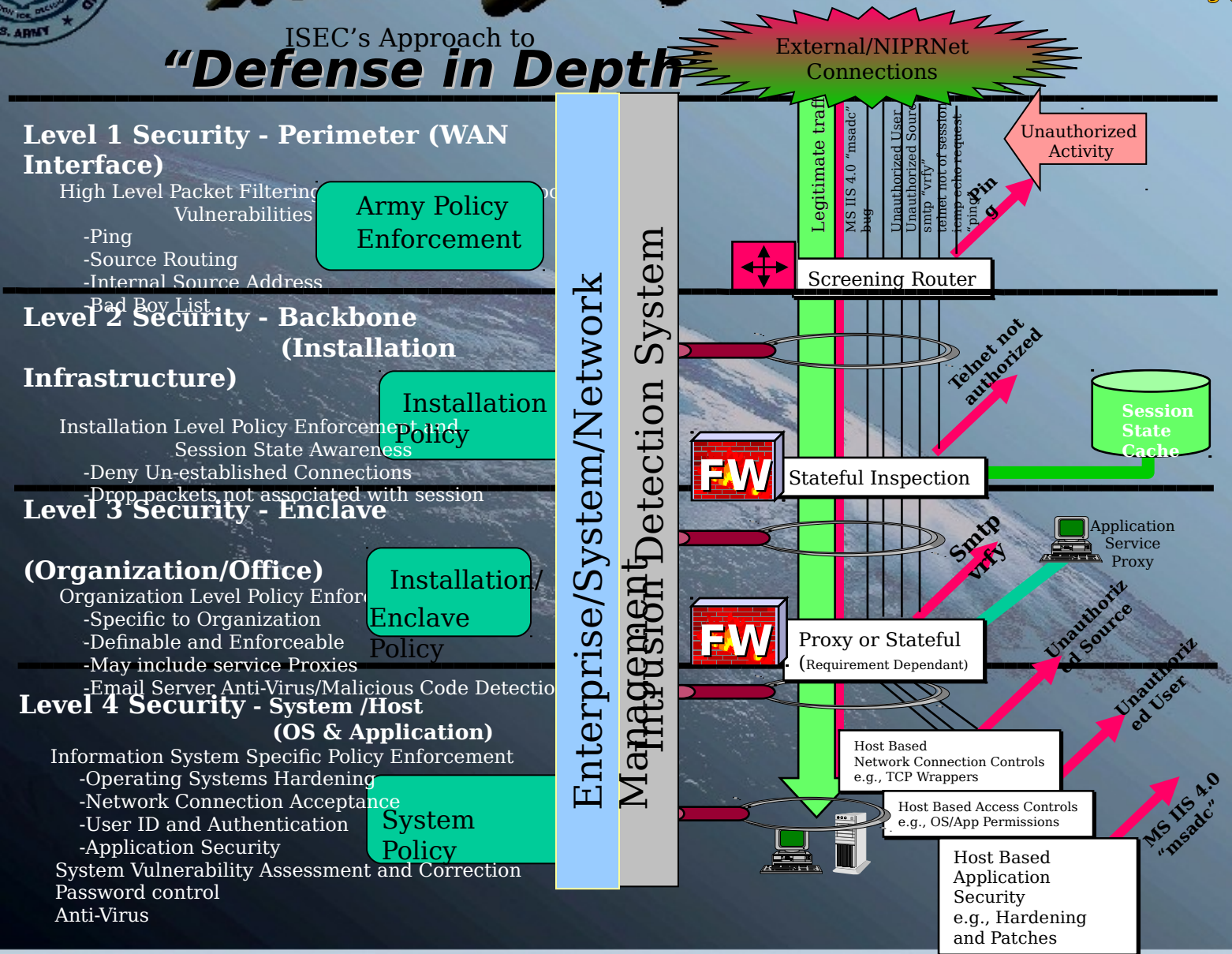
Password control

Anti-Virus

System Policy

Enterprise/System/Network Management

Intrusion Detection System



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